

(I-aiv) compound in which rings A¹ to A⁴ represent trans-1,4- cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5- difluoro-1,4-phenylene, and

(I-av) compound in which one, or two or more hydrogen atoms, which are present in naphthalene-2,6-diyl ring, a 1,2,3,4- tetrahydronaphthalene-2,6-diyl ring, a decahydronaphthalene- 2,6-diyl ring, a side chain group R¹, a polar group Q¹, linking groups K¹ to K⁵ and rings A¹ to A⁴, are substituted with deuterium atoms, in the general formulas (I-1) to (I-5);

(I-avi) compound in which W¹ to W³ represent H, F, Cl, CF₃, or OCF₃ in the general formulas (I-1) to (I-3) and (I-5); and

(I-avii) compound in which X¹ and X² represent H, F, Cl, CF₃, or OCF₃ in the general formulas (I-2) to (I-4) .

4. (Amended) A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component A contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (I-bi) to (I-bvii), the content of said compounds being within a range from 5 to 100% by weight:

(I-bi) compound in which $k^1=k^2=0$, the ring A¹ is trans-1,4- cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5- difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4- tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6- diyl, K¹ is a single bond, -(CH₂)₂-, -COO-, or -C≡C-, and

(I-bii) compound in which $k^1=1$, $k^2=0$, rings A^1 and A^2 represent trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, K^1 is a single bond, $-(CH_2)_2-$, $-COO-$, or $-C\equiv C-$, K^1 and K^2 represent a single bond, $-(CH_2)_2-$, $-COO-$, or $-C\equiv C-$, in the general formula (I-1) in which R^1 is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q^1 is F, Cl, CF_3 , OCF_3 , or CN, and W^1 to W^3 each represents H, F, Cl, CF_3 , or OCF_3 ;

(I-biii) compound in which $k^3=k^4=0$, the ring A^1 is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, and K^1 and K^4 represent a single bond, $-(CH_2)_2-$, $-COO-$, or $-C\equiv C-$, in the general formula (I-2) in which R^1 is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q^1 is F, Cl, CF_3 , OCF_3 , or CN, X^1 and X^2 represent H, F, Cl, CF_3 , or OCF_3 , and W^1 to W^3 represent H, F, Cl, CF_3 , or OCF_3 ;

(I-biv) compound in which $k^1=k^2=0$, K^3 is a single bond, $-COO-$, or $-C\equiv C-$, and

(I-bv) compound in which $k^1=1$, $k^2=0$, the ring A^1 is 1,4-phenylene, 3-fluoro-1,4-phenylene, or a 3,5-difluoro-1,4-phenylene, K^1 and K^3 represent $-COO-$ or $-C\equiv C-$, in the general formula (I-3) in which R^1 is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q^1 is F, Cl, CF_3 , OCF_3 , or C, X^1 and X^2 represent H, F, Cl, CF_3 , or OCF_3 , and W^1 to W^3 represent H, F, Cl, CF_3 , or OCF_3 ;

(I-bvi) compound in which $k^5=k^6=k^7=k^8=0$, K^5 is a single bond, $-(CH_2)_2-$, $-(CH_2)_4-$, $-COO-$, or $-C\equiv C-$,

(I-bvii) compound in which $k^5=1, k^6=k^7=k^8=0$, the ring A^1 is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, K^1 and K^5 represent a single bond, $-(CH_2)_2-$, $-COO-$, or $-C\equiv C-$,

(I-bviii) compound in which $k^7=1, k^5=k^6=k^8=0$, the ring A^3 is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, K^3 and K^5 represent a single bond, $-(CH_2)_2-$, $-COO-$, or $-C\equiv C-$, and

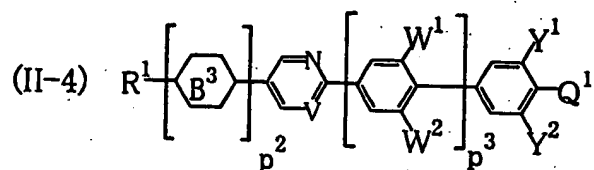
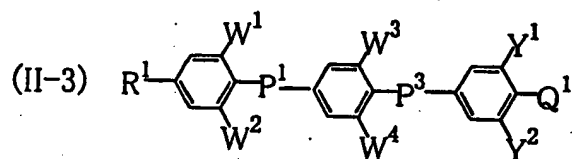
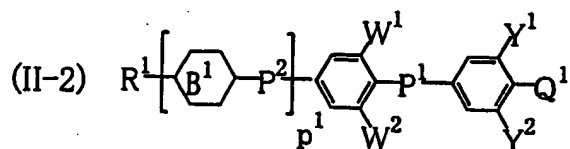
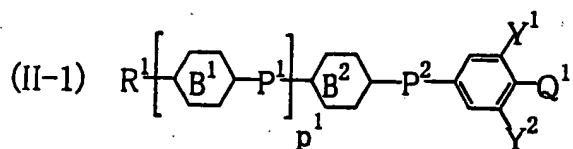
(I-bix) compound in which the decahydronaphthalene-2,6-diyl ring has at least one substituent among substituents $-CF_2-$, $-CH_2-O-$, $-CH=CH-$, $-CH=CF-$, $-CF=CF-$, $-CH=N-$, $-CF=N-$, $>CH-O-$, $>C=CH-$, $>C=CF-$, $>C=N-$, $>N-CH_2-$, $>CH-CF<$, $>CF-CF<$, $>C=C<$, and Si, in the general formula (I-4) in which R^1 is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q^1 is F, Cl, CF_3 , OCF_3 , or CN, and X^1 and X^2 represent H, F, Cl, CF_3 , OCF_3 ; and

(I-bx) compound in which $k^1=k^2=0$, the ring A^1 is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, K^1 is a single bond, $-(CH_2)_2-$, $-(CH_2)_4-$, or $-COO-$, and

(I-bxi) compound in which $k^1=1, k^2=0$, rings A^1 and A^2 represent trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, and K^1 and K^2 each represents a single bond, $-(CH_2)_2-$, $-(CH_2)_4-$, or $-COO-$, in the general formula (I-5) in which R^1 is an alkyl or

alkenyl group having 2 to 7 carbon atoms, Q^1 is F, Cl, CF_3 , OCF_3 , or CN, and W^1 and W^2 represent H, F, Cl, CF_3 , or OCF_3 .

5. (Amended) A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component B contains one, or two or more kinds of compounds selected from the group of compounds represented by the general formulas (II-1) to (II-4) :



(wherein R¹ each independently represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 2 to 10 carbon atoms, said alkyl or alkenyl group can have one, or two or more F, Cl, CN, CH₃ or CF₃ as a non-substituent or substituent group, and one, or two or more CH₂ group, which are present in said alkyl or alkenyl group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

Q¹ each independently represents F, Cl, CF₃, OCF₃, OCF₂H, OCFH₂, NCS, or CN;

W¹ to W⁴ each independently represents H, F, Cl, CF₃, OCF₃, or CN, and also W⁴ each independently represents CH₃;

Y¹ and Y² each independently represents H, F, Cl, CF₃, OCF₃, or CN;

V represents CH or N;

p¹ to p³ each independently represents, a single bond, -COO-, -OCO-, -CH₂O-, -OCH₂-, -(CH₂)₂-, -(CH₂)₄-, -CH=CH- (CH₂)₂-, -(CH₂)₂-CH=CH-, -CH=N-, =CH=N-N=CH-, or -N(O)=N-, and

p¹ and p³ each independently represents -CH=CH-, -CF=CF-, or C \equiv C-;

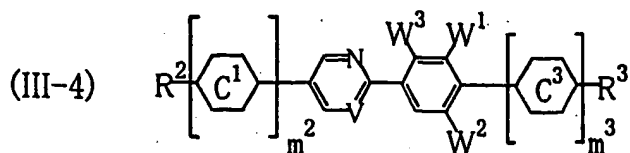
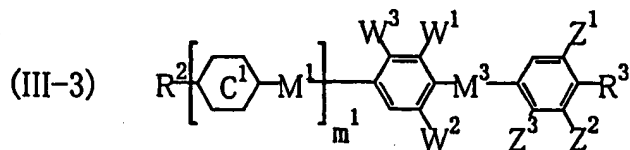
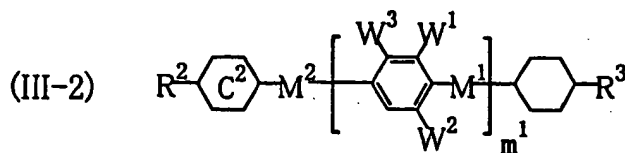
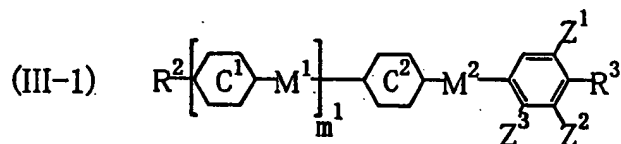
rings B¹ to B³ each independently represents trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane- 2,5-diyl, trans-1-sila-1,4-cyclohexylene, or trans-4-sila-1,4-cyclohexylene, and the ring B³ may also be 1,4-phenylene, 2- or 3-fluoro-1,4-phenylene, 3, 5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-phenylene, 2, 3-dichloro-1,4-phenylene, or 3,5- dichloro-1,4-phenylene;

one, or two or more hydrogen atoms, which are present in a side chain group R^1 , a polar group Q^1 , linking groups P^1 to P^3 and rings B^1 to B^3 , may be substituted with a deuterium atom;

p^1 to p^3 each independently represents 0 or 1, and $p^2 + p^3$ is 0 or 1; and

atoms, which constitute the compounds of the general formulas (II-1) to (II-4), may be substituted with isotope atoms thereof).

9. (Amended) A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component C contains compounds selected from the group of compounds represented by the general formulas (III-1) to (III-4) :



(wherein W^1 to W^3 each independently represents H, F, Cl, CF_3 , OCF_3 , or CN;

V represents CH or N;

R^2 and R^3 each independently represents an alkyl or alkoxy group having 1 to 10 carbon atoms or an alkenyl or alkenyloxy group having 2 to 10 carbon atoms, said alkyl, alkoxy, alkenyl or alkenyloxy group can have one, or two or more F, Cl, CN, CH_3 or CF_3 as a non-substituent or substituent group, and one, or two or more CH_2 group, which are present in said alkyl, alkoxy, alkenyl or alkenyloxy group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

Z^1 to Z^3 each independently represents H, F, Cl, CF_3 , OCF_3 , or CN, and Z^3 each independently represents $-CH_3$;

M^1 to M^3 each independently represents, a single bond, $-COO-$, $-OCO-$, $-CH_2O-$, $-OCH_2-$, $-(CH_2)_2-$, $-(CH_2)_4-$, $-CH=CH-(CH_2)_2-$, $-(CH_2)_2-CH=CH-$, $-CH=N-$, $=CH=N-N=CH-$, or $-N(O)=N-$, and M^1 and M^3 each independently represents $-CH=CH-$, $-CF=CF-$, or $C\equiv C-$;

rings C^1 to C^3 each independently represents trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, naphthalene-2,6-diyl and 1,2,3,4-tetrahydronaphthalene-2,6-diyl can have one, or two or more F, Cl, CF_3 or CH_3 as a non-substituent or substituent group, and rings C^1 and C^3 may also be 1,4-phenylene, 2,3-difluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, 2- or

3-chloro-1,4-phenylene, 2,3- dichloro-1,4-phenylene, or 3,5-dichloro-1,4-phenylene;

one, or two or more hydrogen atoms, which are present in side chain groups R^2 and R^3 , linking groups M^1 to M^3 and rings C^1 to C^3 , may be substituted with a deuterium atom;

m^1 to m^3 each independently represents 0 or 1, and $m^2 + m^3$ is 0 or 1; and

atoms, which constitute the compounds of the general formulas (III-1) to (III-4), may be substituted with isotope atoms thereof).

13. (Amended) A nematic liquid crystal composition according to claim 1, wherein said liquid crystal composition contains one, or two or more kinds of core-structure compounds which have four six-membered rings and a liquid crystal phase- isotropic liquid phase transition temperature of 100°C or higher.

14. (Amended) A nematic liquid crystal composition according to claim 1, wherein said liquid crystal composition has a dielectric constant anisotropy within a range from 2 to 40, a birefringent index within a range from 0.02 to 0.40, a nematic phase-isotropic liquid phase transfer temperature within a range from 50 to 180°C or higher, and a crystal phase-, smectic phase- or glass phase-nematic phase transfer temperature within a range from -200 to 0°C.

15. (Amended) A nematic liquid crystal composition according to claim 1, wherein said liquid crystal composition contains a compound having an optically active group capable of securing an induced helical pitch within a range from 0.5 to 1000 μ m.

16. (Amended) An active matrix, twisted nematic or super twisted nematic liquid display device using the nematic liquid crystal composition of claim 1.

17. (Amended) A light scattering type liquid display device comprising a light modulation layer which contains the liquid crystal composition of claim 1 and a transparent solid substance.